

**In the Drawings**

A "Replacement Sheet" is attached which includes a clean version of amended Figures 3-4. The attached sheet replaces the original sheet including Figures 1-4.

FIGS. 3 and 4 have been amended in response to the Office Action's objections. FIG. 3 has been amended to include the legend " $C_s = 0.1\text{pF}$  to  $10\text{pF}$ ." FIG. 4 has been amended to include the legend " $C_s = 0.1\text{pF}$  to  $10\text{pF}$ " and also "Central frequency ranges from a few tens of MHz to a few tens of GHz."

### **REMARKS**

In response to the Office Action mailed March 2, 2005, Applicants respectfully request reconsideration. Claims 1-7 were previously pending in this application. Claims 1, 6 and 7 have been amended. New claims 8-20 have been added to more fully define Applicants' contribution to the art. As a result, claims 1-20 are currently pending for examination with claims 1, 8 and 16 being independent claims. No new matter has been added.

#### **Preliminary Matters**

The Office Action indicated that the French Search Report from French Patent Application 02/15477 was not found in the file. Enclosed herewith is a copy of the French Search Report.

#### **Objections to the Drawings**

The Office Action objected to drawings under 37 C.F.R. §1.38(a). Claim 6 has been amended to overcome the objection regarding the two metallization levels. As discussed above, FIGS. 3 and 4 have been amended in response to the Office Action's objections. FIG. 3 has been amended to include the legend "Cs = 0.1pF to 10pF." FIG. 4 has been amended to include the legend "Cs = 0.1pF to 10pF" and also "Central frequency ranges from a few tens of MHz to a few tens of GHz."

Accordingly, withdrawal of this objection is respectfully requested.

#### **Rejections Under 35 U.S.C. §102**

The Office Action rejected claims 1-4 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,375,054 ("Pavio").

Pavio is directed to a microwave quadrature coupler. FIG. 1 shows a microwave coupler having conductive lines 2 and 4. A first capacitor 32 has a first termination connected to conductive line 2, and a second termination connected to conductive line 4. A second capacitor 34 also has a first termination connected to conductive line 2, and a second termination connected to conductive line 4.

The Office Action rejected claims 1, 2 and 5 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,593,208 ("Smith"). Applicants respectfully traverse this rejection.

Smith is directed to a microwave coupler having lumped-element capacitors. FIG. 4 of Smith shows two conductive lines 31 and 32. A first capacitor 33 has a first termination connected to conductive line 31, and a second termination connected to conductive line 32. A second capacitor 34 also has a first termination connected to conductive line 31, and a second termination connected to conductive line 32.

By contrast claim 1, as amended recites, *inter alia*, a first capacitor coupled to the two end terminals of the first conductive line. Neither Pavo nor Smith teach or suggest a first capacitor coupled to the two end terminals of a conductive line. Therefore, claim 1 patentably distinguishes over Pavo and Smith. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 2-7 depend from claim 1 and are therefore patentable over Pavo and Smith for at least the same reasons.

The Office Action rejected claims 1-3 under 35 U.S.C. §102(b) as being anticipated by Ojha et al. ("Reduced Size RF Coupler Design for Specialized Load Requirements"). Applicants respectfully traverse this rejection.

Ojha et al. is directed to a reduced size RF coupler design for specialized load requirements. FIG. 2 of Ojha et al. shows a first capacitor coupled to two ends (Ports 2 and 3) of a first conductive line and a second capacitor coupled to two ends (Port 1 and ground) of a second conductive line. As illustrated in FIG. 2, one end of the second conductive line is directly connected to ground. Therefore, there is only one port on the second conductive line from which a coupled signal may be read: Port 1. A signal flowing from Port 2 to Port 3 will be coupled to Port 1 in the same way that a signal flowing from Port 3 to Port 2 will be coupled to Port 1. Therefore, it is unclear how one would determine the directionality of the signal on the first conductive line by only reading Port 1.

By contrast, claim 1, as amended, recites, *inter alia*, a directional distributed coupler. Ojha et al. does not teach or suggest a directional coupler. Therefore, claim 1 patentably distinguishes over Ojha et al. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 2-7 depend from claim 1 and are therefore patentable over Ojha et al. for at least the same reasons.

New claim 8 is related to a directional distributed coupler that includes a first conductive line that carries a signal from a first terminal to a second terminal. The directional distributed coupler also includes a first capacitor connected to the first terminal and the second terminal. The directional distributed coupler further includes a second conductive line coupled to the first conductive line, the second conductive line having a third terminal and fourth terminal. Claim 8 patentably distinguishes over Ojha et al., Pavio and Smith because none of these references teaches or suggests a directional distributed coupler having a first conductive line that carries a signal from a first terminal to a second terminal and a first capacitor connected to the first terminal and the second terminal.

New claim 16 is related to a directional distributed coupler that includes a first conductive line that carries a signal from a first terminal to a second terminal. The directional distributed coupler also includes a first capacitor connected to the first terminal and the second terminal. The directional distributed coupler further includes a second conductive line coupled to the first conductive line. Claim 16 patentably distinguishes over Ojha et al., Pavio and Smith because none of these references teach or suggest a directional distributed coupler that includes a first conductive line that carries a signal from a first terminal to a second terminal and a first capacitor connected to the first terminal and the second terminal.

**CONCLUSION**

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,  
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établi sur la base des dernières revendications  
déposées avant le commencement de la recherche

FA 627448  
FR 0215477

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# **RAPPORT DE RECHERCHE PRÉLIMINAIRE**

établi sur la base des dernières revendications  
déposées avant le commencement de la recherche

N° d'enregistrement  
national

FA 627448  
FR 0215477

DOCUMENTS CONSIDÉRÉS COMME PERTINENTS		Revendication(s) concernée(s)	Classement attribué à l'invention par l'INPI
Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes		
A	CHEN J-L ET AL: "A HIGH-DIRECTIVITY MICROSTRIP DIRECTIONAL COUPLER WITH FEEDBACK COMPENSATION" 2002 IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM DIGEST.(IMS 2002). SEATTLE, WA, JUNE 2 - 7, 2002, IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM, NEW YORK, NY: IEEE, US, vol. 1 OF 3, 2 juin 2002 (2002-06-02), pages 101-104, XP001099454 ISBN: 0-7803-7239-5 * page 101, colonne de gauche, ligne 15-21; figure 1A *	1	
A	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 02, 5 février 2003 (2003-02-05) & JP 2002 299922 A (KYOCERA CORP), 11 octobre 2002 (2002-10-11) * abrégé *	1	
A	US 5 629 654 A (FRICK ERIC A) 13 mai 1997 (1997-05-13) * colonne 1, ligne 48-61 * * colonne 2, ligne 37-65; figures 1,2 *	5,6	DOMAINES TECHNIQUES RECHERCHÉS (Int.CL.7)
Date d'achèvement de la recherche		Examineur	
4 juillet 2003		Den Otter, A	
<p><b>CATÉGORIE DES DOCUMENTS CITÉS</b></p> <p>X : particulièrement pertinent à lui seul Y : particulièrement pertinent en combinaison avec un autre document de la même catégorie A : arrière-plan technologique O : divulgation non-écrite P : document intercalaire</p> <p>T : théorie ou principe à la base de l'invention E : document de brevet bénéficiant d'une date antérieure à la date de dépôt et qui n'a été publié qu'à cette date de dépôt ou qu'à une date postérieure. D : cité dans la demande L : cité pour d'autres raisons &amp; : membre de la même famille, document correspondant</p>			

**ANNEXE AU RAPPORT DE RECHERCHE PRÉLIMINAIRE  
RELATIF A LA DEMANDE DE BREVET FRANÇAIS NO. FR 0215477 FA 627448**

La présente annexe indique les membres de la famille de brevets relatifs aux documents brevets cités dans le rapport de recherche préliminaire visé ci-dessus.

Les dits membres sont contenus au fichier informatique de l'Office européen des brevets à la date d'04-07-2003

Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office européen des brevets, ni de l'Administration française

Document brevet cité au rapport de recherche		Date de publication	Membre(s) de la famille de brevet(s)		Date de publication
US 4937541	A	26-06-1990	AUCUN		
JP 56062402	A	28-05-1981	JP	1352549 C	11-12-1986
			JP	61015605 B	25-04-1986
JP 05259717	A	08-10-1993	JP	3106632 B2	06-11-2000
JP 2002299922	A	11-10-2002	AUCUN		
US 5629654	A	13-05-1997	EP	0897601 A1	24-02-1999
			JP	2000510299 T	08-08-2000
			WO	9742678 A1	13-11-1997